IN THE SPECIFICATION:

Paragraph beginning at line 15 of page 11 has been amended as follows:

Fig. 25 is a structural view of a near-field optical probe according to a seventh embodiment of the invention; ~~and~~

Paragraph beginning at line 17 of page 11 has been amended as follows:

Fig. 26A - 26D are a view for explaining a manufacturing method for a near-field optical probe according to a seventh embodiment of the invention~~.~~; and

Fig. 27 shows a near-field optical probe according to an eighth embodiment of the invention.

Heading at line 19 of page 11 has been amended as follows:

DETAILED DESCRIPTION OF THE PREFERRED ~~EMBODIMENT~~ EMBODIMENTS

Paragraph beginning at line 20 of page 11 has been amended as follows:

Hereunder, explanations will be made in detail on embodiments of a near-field optical device and method for manufacturing the same ~~of~~ according to the present invention with reference to the accompanying drawings.

Paragraph b ginning at lin 28 of page 28 has b en amended as follows:

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Fig. 23 is a schematic view of a near-field optical probe 7000 according to Embodiment 6, which can be used to be mounted on the scanning probe microscope 20000. Explanation will be made by using the same reference numerals to the same points of the near-field optical probe 1000 shown in Fig. 1. The near-field optical probe 7000 comprises a structure having a convex weight portion 701 added to the near-field optical probe 1000 shown in Fig. 1. The weight portion 701 is formed on the lever 2 between a tip 1 and a fixed end 702 of the lever 2 with respect to the length Lx direction of the lever 2. The weight portion 701 has a height H2 equal to or lower than a height H1 of the tip 1. Incidentally, the weight portion 701 may be similarly formed on the near-field optical probe 2000 or near-field optical probe 3000. The near-field optical probe 7000 is in proximity to a sample in a state inclined by a certain angle $\theta 1$ similarly to the near-field optical probe 1000 shown in Fig. 2. Consequently, when the tip 1 at an end is proximity to the sample, the weight portion 701 will not interfere with the sample. The material of the weight portion 701 is the same as the tip 1.

Paragraph b ginning at lin 23 of page 33 has b en amended as follows:

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According to the manufacturing method for a near-field optical probe according to Embodiment 1 of the invention, a near-field optical probe can be manufactured. Also, because the manufacturing method explained uses a silicon process, it is possible to manufacture near-field optical probes on a large scale basis and with high reproducibility. Accordingly, the near-field optical probe can be provided at low cost. Also, because the lever is easy to reduce the size, it is possible to increase the resonant frequency of the lever of the near-field optical probe and, at the same time, decrease the spring constant. Consequently, in the scanning probe microscope, distance control can be stably made between an end of the tip and a sample, and wherein the end of the tip and the sample can be prevented from being damaged. Furthermore, scanning velocity in the scanning prob microscope can be increased.

Also, by controlling the adhesion between the transparent member and the mask for a tip, an arbitrary end angle can be obtained for the tip. Accordingly, by increasing an end angle of the tip end, the near-field light illuminated or/and detected from the microscopic aperture can be increased in intensity. Also, in another embodiment, a tip having a

plurality of surfaces with different taper angles is obtainable by conducting the tip-forming process a plurality of number of times. Consequently, by decreasing the end angle of the tip and increasing the taper angle to a middle portion of the tip, it is possible to provide a near-field optical probe satisfying at the same time the high resolution for concave-convex images and optical images and the high producing efficiency of near-field light. Also, the tip can be made into a shape of circular cone or arbitrary polygonal cone by providing the tip mask with a circular or polygonal shape as viewed from the above in Fig. 4B, where the tip is in a circular cone, and the microscopic aperture is circular in shape whereby near-field light having an arbitrary polarization characteristic can be illuminated from the microscopic aperture by controlling the polarization characteristic of the light incident on the near-field optical probe. Also, where the tip is in a polygonal cone shape, the microscopic aperture is given a polygonal shape enabling illumination of light having a magnitude great in a particular polarization direction to a sample.

Also, a near-field optical probe having a lens on the tip can be obtained by forming a Fresnel lens pattern on the substrate to form a tip 1 on a Fresnel-lens pattern, forming a portion having a refractivity distribution in a

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transparent member in portion having a refractivity distribution in a transparent member in a portion for forming a tip upon deposition of a transparent member, or forming a lens-formed recessing a portion of the substrate for forming a tip to deposit a transparent member. Accordingly, the near-field light produced from the microscopic aperture can be increased in intensity. Also, according to the manufacturing method for a near-field optical probe, it is easy to form, on the base, a multi-cantilever having a plurality of levers, tips and microscopic apertures. According to the multi-cantilever, because a plurality of tips and microscopic apertures can be simultaneously scanned, observation over a large area is possible at high velocity. Also, according to the manufacture method for a near-field optical probe, because a sensor of a piezoelectric or static capacitance type to be fabricated by a similar manufacturing method can be easily integrated on the lever, deflection of the lever can be detected without using an optical lever. Also, deflection of the lever can be detected by structuring the lever by a piezoelectric member including of quartz and forming an electrode. Furthermore, where the lever is structured of quartz, it is also possible to detect deflection in the lever and/or apply vibration to the lever.

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